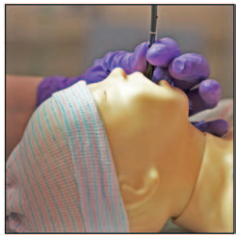
ANESTHESIOLOGY

Jean Mantz, M.D., Ph.D., Editor

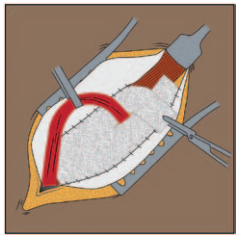
Neurodevelopmental outcome at 2 years of age after general anaesthesia and awake-regional anaesthesia in infancy (GAS): An international multicentre, randomised controlled trial. Lancet 2016; 387:239–50.

There is a debate about potential neurotoxicity of anesthetics in infancy. Whether anesthesia during infancy alters neurocognitive potential remains unproven. This international assessor-masked randomized controlled equivalence trial aimed to determine whether undergoing general *versus* spinal anesthesia in infancy alters neurodevelopmental outcome. Three hundred and sixty-three infants were randomly assigned to receive awake-regional anesthesia and 359 to receive general anesthesia. The primary outcome was a composite cognitive outcome assessed at 2 yr. The authors found no evidence that just less than 1 h of sevoflurane anesthesia in infancy increases the risk of adverse neurodevelopmental outcome at 2 yr of age compared with awake-regional anesthesia. *(Summary: J. Mantz. Image: S. Suresh.)*



Airway management complications in children with difficult tracheal intubation from the Pediatric Difficult Intubation (PeDI) registry: A prospective cohort analysis. Lancet Respir Med 2016; 4:37–48.

Despite the established vulnerability of children during airway management, little is known about complications of tracheal intubation. Using the Pediatric Difficult Intubation registry, the authors examined the risk factors, success rate, and complications of difficult tracheal intubation. Data were prospectively collected from 1,018 difficult tracheal intubations in 13 children's hospitals in the United States between August 2012 and January 2015. The most frequently attempted first tracheal intubation techniques were direct laryngoscopy (half of the cases), fiberoptic bronchoscopy (28%) and indirect video laryngoscopy (18%) with first attempt success rates of 3%, 54%, and 55%, respectively. Tracheal intubation failed in 2% of cases. The most common severe complication was cardiac arrest (2% of patients). These results help us understand the frequency of difficult intubation in pediatric patients and may help design a strategy to better prepare for these situations. *(Summary: J. Mantz. Image: J. P. Rathmell.)*



A randomized trial of low-cost mesh in groin hernia repair. N Engl J Med 2016; 374:146–53.

The most effective method for repair of a groin hernia involves the use of a synthetic mesh, but this type of mesh is unaffordable for many patients in low- and middle-income countries. Sterilized mosquito meshes have been used as a lower cost alternative but have not been rigorously studied. In this prospective, blinded, randomized controlled trial comparing low-cost mesh with commercial mesh (both lightweight) for the repair of a groin hernia, 302 adult men in eastern Uganda who had primary, unilateral, reducible groin hernias were included. Surgery was performed by four qualified surgeons. The primary outcomes were hernia recurrence at 1 yr and postoperative complications. Hernia recurred in one patient (0.7%) assigned to the low-cost mesh and in no patients assigned to the commercial mesh (absolute risk difference, 0.7 percentage points; 95% CI, –1.2 to 2.6; $P = 1.0$). No significant difference was found in postoperative complications (44 patients [30.8%] assigned to the low-cost mesh and 44 patients [29.7%] assigned to the commercial mesh). These results indicate that low-cost mesh can be used safely for hernia repair with an excellent outcome. *(Summary: J. Mantz. Illustration: J. P. Rathmell.)*

Only patients with BP below 160/100 should be referred for surgery to avoid cancellations, guidelines say. BMJ 2016; 352:i296.

Guidelines have been developed jointly by Association of Anaesthetists of Great Britain and Ireland and the British Hypertension Society that give national recommendations for the measurement, diagnosis, and management of raised blood pressure in adults before planned surgery. In this commentary, the author offers insight into the rationale behind development of these new guidelines. Nearly 1% of planned surgery is currently cancelled at the last minute, and hypertension is a common reason. The guidelines aimed to stop hospital staff from diagnosing hypertension during preoperative assessment, where readings are often significantly higher than those recorded during primary care visits. They encourage general practitioners to include information on a patient's blood pressure in referral letters for elective surgery. "Secondary care teams should accept patients for elective surgery if they have documented evidence in [general practitioner] referral letters that the patient's mean [blood pressure] has been lower than 160 mmHg systolic and 100 mmHg diastolic over the previous 12 months," the guidance recommends. The guidelines apply only to patients referred for elective surgery and not to those requiring emergency surgery, cardiac surgery, or surgery for high blood pressure, or to children and pregnant women. These guidelines point out the importance of improved communication between primary and secondary care that is essential in reducing unnecessary last-minute cancellations for elective surgery. *(Summary: J. Mantz. Image: J. P. Rathmell.)*

Randomized trial of communication facilitators to reduce family distress and intensity of end-of-life care. Am J Respir Crit Care Med 2016; 193:154–62.

Communication with families of critically ill patients is often poor, and poor communication is associated with family distress and increased intensity of care at the end of life. In this randomized trial at two hospitals, facilitators supported communication between clinicians and families, adapted communication to family needs, and mediated conflict. Of 488 eligible patients, 168 were randomized and of 352 eligible family members, 268 participated. The intervention was associated with decreased depressive symptoms among family members participating at 6 months (P = 0.017), but there were no significant differences in psychological symptoms at 3 months or anxiety or posttraumatic stress disorder at 6 months. This randomized trial of an intensive care unit communication facilitator is the first study to suggest that a communication intervention is associated with a reduction in intensity of end-of-life care and similar or improved family distress. *(Summary: J. Mantz. Image: © Thinkstock.)*

Conservative *versus* liberal oxygenation targets for mechanically ventilated patients: a pilot multicenter randomized controlled trial. Am J Respir Crit Care Med 2016; 193: 43–51. How much oxygen? Oxygen titration goals during mechanical ventilation. Am J Respir Crit Care Med 2016; 193:4–5.

How to determine the optimal level of oxygen administration that balances adequate oxygenation with minimum toxicity during mechanical ventilation remains unclear. This randomized controlled multicenter international trial aimed to determine the safety and feasibility of a conservative oxygenation strategy *versus* a liberal oxygenation strategy in critically ill mechanically ventilated patients. One hundred and three patients were randomly allocated to either a conservative oxygenation strategy with target oxygen saturation as measured by pulse oximetry (SpO_2) of 88–92% (n = 52) or a liberal oxygenation strategy with target SpO_2 of greater than or equal to 96% (n = 51). Primary endpoints were the mean area under the curve for SpO_2, arterial oxygen saturation, arterial oxygen tension, and fraction of inspired oxygen on days 0 to 7. In this trial with limited size, it was found that a conservative oxygen strategy for mechanical ventilation was both feasible and safe. *(Summary: J. Mantz. Image: J. P. Rathmell.)*

Expectations predict chronic pain treatment outcomes. Pain 2016; 157:329–38.

There is much interest in identifying patient factors that are associated with chronic pain treatment outcomes. Various demographic, medical, and psychological factors have been associated with favorable *versus* less favorable treatment responses. In their recent study, Cormier *et al.* evaluated the impact of patient expectations on key pain treatment outcomes. This observational cohort study was remarkable for its size, 2,272 participants, and the 6-month duration of follow-up after enrollment in three Canadian multidisciplinary treatment programs. Strong positive relationships were shown between pretreatment expectations and 6-month changes in pain intensity and quality of life, though not to functional changes. The authors discovered that the patient's global impression of change seemed to mediate these relationships. The authors suggest that factors such as expectation-driven perception of change and compliance with therapies might explain their observations. These findings may indicate that more effort should be devoted to enhancing expectations for change prior to beginning pain treatment. *(Summary: J. D. Clark. Image: ©Thinkstock.)*

Remediation methods for milestones related to interpersonal and communication skills and professionalism. J Grad Med Educ 2016; 8:18–23. Residency postinterview communications: More harm than good? J Grad Med Educ 2016; 8:7–9.

Teaching professionalism and guarding against its abuse are major challenges for all medical specialties. Regan and colleagues, Residency Directors in Emergency Medicine, considered interpersonal and communication skills and professionalism to identify "common content themes." They agreed that common themes exist and questioned whether they were more universally applicable, specifically thinking about 12 other disciplines including anesthesiology. From this review, professionalism and interpersonal and communication themes were cataloged within the article with accompanying suggested remediation strategies if they were breached. This schema can serve anesthesiology faculty well as they identify resident trainees who lack these essential skills. Grimm and colleagues considered the potential negative impact of residency postinterview communications upon the match process for positions in graduate medical education programs. Data collected from programs and applicants included such match violations (unprofessional behaviors) as applicants falsely claiming they would rank a program as their first choice and programs making misleading statements to applicants that would impact the candidates' eventual ranking determination. These authors propose recommendations about communication after the interview to reduce ambiguity and undue influence upon applicants as they determine their best match ranking priorities. *(Summary: A. J. Schwartz. Image: J. P. Rathmell.)*